IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A method for identifying features in an object, comprising:

positioning and focusing a polarimeter onto the object;

illuminating the object with a series of at least 16 polarization states;

analyzing a plurality of reflected images corresponding to said at least 16 polarization states;

obtaining a Mueller matrix from the plurality of reflected images; and

calculating a plurality of depolarization parameters, except for the depolarization index, from the Mueller matrix as a contrast mechanism for identifying features of the illuminated object.

Claim 2 (Previously Presented): The method of Claim 1, wherein said depolarization parameters comprise:

at least one of an average degree of polarization or a weighted average degree of polarization of the illuminated object.

Claim 3 (Previously Presented): The method of Claim 1, wherein said depolarization parameters comprise:

at least one of a degree of polarization surface or a degree of polarization map of the reflected images.

Claim 4 (Previously Presented): The method of Claim 1, further comprising:

calculating at least one of a minimum and a maximum degrees of polarization of the reflected images.

Claim 5 (Original): The method of Claim 4, wherein said step of calculating at least one of a minimum and a maximum degrees of polarization comprises:

calculating both a minimum and a maximum degrees of polarization; and

calculating a difference between said minimum and a maximum degrees of polarization.

Claim 6 (Original): The method of Claim 1, further comprising:

decomposing said Mueller matrix into a depolarization matrix and at least one of a diattentuation matrix and a retardance matrix.

Claim 7 (Original): The method of Claim 6, further comprising:

calculating a depolarization relative to a corresponding diattentuation or retardance axis.

Claim 8 (Original): The method of Claim 6, further comprising:

calculating a depolarization relative to a corresponding diattentuation or retardance off-axis.

Claim 9 (Cancelled).

Claim 10 (Original): The method of Claim 1, further comprising: calculating a ratio of diattenuation to polarizance.

Claim 11 (Original): The method of Claim 1, further comprising:

calculating a ratio of an average magnitude of Mueller matrix rows to an average magnitude of Mueller matrix columns.

Claim 12 (Previously Presented): The method according to any one of Claims 1-8 or 10-11, wherein said polarimeter comprises at least one of an optical polarimeter, an X-ray polarimeter, an IR polarimeter, or a UV polarimeter.

Claim 13 (Currently Amended): A method of retinal polarimetry, comprising:

emitting laser light to a retina via (a) a polarizer, (b) a first liquid crystal polarization controller, (c) a non-polarizing beam splitter, (d) a rotating half-wave retarder, and (e) an objective lens, the laser light passing through (a), (b) and (c) in this order;

reflecting light from the retina to a co-polarized photodetector via the objective lens to generate reflected images, the rotating half-wave retarder, the non-polarizing beam splitter, a second liquid crystal polarization controller, and a polarizing beam splitter;

obtaining a Mueller matrix from the plurality of reflected images; and

calculating a plurality of depolarization parameters, except for the depolarization index, from the Mueller matrix as a contrast mechanism for identifying features of the illuminated [[object]] retina.

Claim 14 (Original): The method of Claim 13, further comprising:

passing light from said polarizing beam splitter to a cross-polarized photodetector.

Claim 15 (Original): The method of Claim 14, further comprising:

adjusting a light parameter by controlling the retardance of said first and second liquid crystal polarization controllers by changing a respective retardance over more than one wave of retardation.

Claim 16 (Previously Presented): The method of Claim 15, further comprising:

acquiring four sets of images, wherein

a first set of images corresponds to the two liquid crystal polarization controllers being adjusted to +7/8 and +7/8 waves retardance,

a second set of images corresponds to the two liquid crystal polarization controllers being adjusted to +7/8 and +9/8 waves retardance,

a third set of images corresponds to the two liquid crystal polarization controllers being adjusted to +9/8 and +9/8 waves, and

a fourth set of images corresponds to the two liquid crystal polarization controllers being adjusted to +9/8 and +7/8 waves.

Claim 17 (Previously Presented): A method of retinal polarimetry, comprising:

illuminating a retina with polarized light via a probe inserted into the eye;

producing a depolarization parameter and one of a retardance and a diattenuation parameter;

collecting light reflected off the retina with a receiver located outside of the eye or inside of the eye;

analyzing the reflected light with a polarization state analyzer;

obtaining a Mueller matrix image from the reflected light; and

analyzing said Mueller matrix by calculating a plurality of depolarization parameters, except for the depolarization index, from the Mueller matrix as a contrast mechanism for use in identifying features of the retina.

Claim 18 (Currently Amended): The method of Claim [[1]] 2, further comprising:

generating a polarization image with at least one of the average degree of polarization or the weighted average degree of polarization of the reflected images to detect a structure in the illuminated object.

Claim 19 (Currently Amended): The method of Claim 17, further comprising:

generating a polarization image with at least one of [[the]] an average degree of polarization or [[the]] a weighted average degree of polarization of the reflected light to detect a structure in the retina.

Claim 20 (Previously Presented): The method of Claim 12, wherein the polarimeter is a retinal polarimeter.